

Book Review

Dietary Fat and Cancer: Genetic and Molecular Interactions Advances in Experimental Medicine and Biology
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American Institute for Cancer Research
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This book contains the proceedings of the American Institute for Cancer Research's Seventh Annual Conference on Dietary Fat and Cancer: Genetic and Molecular Interactions, held in 1996 in Washington, D.C., USA. The book contains fifteen full chapters based on the main papers presented at the meeting and is followed by fifty-seven brief poster abstracts. Two separate presentations were given as the conference overview and these appear in the book as the excellent first two chapters "Fat and Cancer: The Epidemiologic Evidence in Perspective" (Chapter 1) and "Dietary Lipids and the Cancer Cascade" (Chapter 2).

The first chapter considers the classification of the different types of dietary fats, their sources in the diet and their likely biological effects on cancer cells. The epidemiological associations of dietary fat and cancer are then considered for a wide range of cancers including colon cancer, where there is a weak but positive association with dietary fat intake. Most studies of dietary fat intake and prostate cancer show a positive relationship, however, it is currently unclear for

breast cancer whether or not an important relationship does exist with dietary fat. Furthermore, it is possible that protective effects may actually be derived from consumption of certain types of fat such as monounsaturated fat (largely from olive oil – contributes to the many health benefits of the "Mediterranean diet").

Chapters 3–5 cover other molecular aspects of dietary fat and breast cancer, in particular the role of different fatty acids on cell signalling and proliferation. In general, stimulatory effects on breast cancer cell growth have been shown for polyunsaturated omega-6 fatty acids while inhibitory ones have been demonstrated for the protective long-chain omega-3 fatty acids (oily fish is a good dietary source). The role of dietary fat and cholesterol on the induction phase of breast cancer is the subject of Chapter 3. The regulatory action of individual fatty acids on breast cancer cell growth and invasion (Chapter 4), and on breast cancer cell proliferation (Chapter 5) is also considered.

The second main overview chapter (Chapter 2) considers the important role of genetics in cancer initiation and progression. One example considered is that of the BRCA1 and BRCA2 tumour suppressor genes: inherited mutations in these genes greatly increases the risk of breast cancer. Inheritance of two defective copies of the GSTM1 gene (for glutathione-S-transferase), which detoxifies a carcinogen in tobacco smoke, increases the risk of cancer in smokers. Since the gene polymorphisms that may influence cancer risk may also interact with dietary factors, prevention

strategies involving diet and nutrition may be important in individuals with defective genes. Other related chapters include the ones on "Diet, Apoptosis and Carcinogenesis" (Chapter 8) and "Dietary Fat, Genes and Human Health" (Chapter 14).

My only reservations concerning this book relate to the inclusion of the poster abstracts, which were really too brief and lacking in any references to the literature, to contribute a great deal to this generally very useful book. Indeed, it would probably be preferable to exclude

poster abstracts from future volumes in the series and perhaps to concentrate instead on expanding and up-dating the mostly excellent main chapters.

Overall, I am pleased to be able to highly recommend this book, which contributes greatly to our understanding of the important issues in the field of dietary fat and cancer.

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